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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/781,745	02/20/2004	Yoshitaka Iwaji	500.43498X00	3601

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EXAMINER

LEYKIN, RITA

ART UNIT PAPER NUMBER

2837

DATE MAILED: 05/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/781,745

Applicant(s)

IWAJI ET AL.

Examiner

Rita Leykin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☒ Claim(s) 2-9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/20/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Ohmura et al. US # 6,556,458 and Sakai et al. US # 6,556,464.

2. With respect to claim 1, Ohmura et al. teach an inverter device with improved current detector. Wherein Fig. 2 shows:

- A dc power supply 2 presented as diode bridge circuit 9 in coupling with power source 8;
- A brushless motor 22;
- An inverter, presented as inversion section 3;
- A current detecting resistor 4 connected between the power source and inverter;
- A PWM circuit 6g for controlling gate drive circuit output to motor;

Ohmura et al. do not teach sampling means. However, Sakai et al. disclose a PWM converter. Wherein in Fig. 1 Sakai et al. show:

- A load 5, that is powered from AC power source 1a;

- An inverter, presented as converter 3a, controlled via PWM gate signal generator 14a coupled to control power supply current command computation unit 12, wherein the output current of the later is sinusoidal, (see equation 1, column 4, lines 10-12);
- A current detecting means 7;
- A sampling and hold circuit which samples and holds a direct current, (see abstract).

Sakai et al. do not teach sampling means that is provided for sampling of the inverter current detected by current sensor connected between power supply and inverter. However, Sakai et al. employ in the system a sample-and-hold circuit, in connection with detector 9, that detects the input current waveform of the converter. Hence, it has been obvious to one of ordinary skills in the art, at the time invention was made to adjust the Sakai et al. system with sample and hold means to sample the current sensed by current detection means that is located between power source and inverter to control power supply of inverter, as it claimed.

The reason is to coordinate the supplied electric power to the load with motor current output.

Allowable Subject Matter

3. Claims 10 and 11 allowed.

4. Claims 2-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter. The prior art made of record in the attached form PTO-892 considered to be pertinent to the submitted application.

However, none of the prior art teaches or suggest in combination:

- Sampling means that samples the inverter current in a time consisting of 33-67% of the power conduction time from a rise-up time of the inverter current.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rita Leykin whose telephone number is (571)272-2066. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571)272-2107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rita Leykin
Primary Examiner
Art Unit 2837

R.L.

A handwritten signature in black ink, appearing to read "Rita Leykin", is written over the printed name and title.